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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
)
Redevelopment of Spectrum To)
Encourage Innovation in the)
Use of New Telecommunications)
Technologies)

ET Docket No. 92-9

To: The Commission

ORIGINAL
FILE

REPLY COMMENTS OF CENTEL CORPORATION

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REPLY COMMENTS OF CENTEL CORPORATION

Centel Corporation ("Centel") hereby submits its reply to opening comments on the Commission's Notice of Proposed Rulemaking in the above-captioned proceeding.¹ As detailed below, the opening comments underscore the need for great care and caution in considering massive dislocations of essential existing services for as yet unidentified emerging technologies. The Commission should seek to harmonize and optimize safeguards of established services with opportunities for new technologies.

I. SUMMARY

The vast majority of commenters express concern that the proposed relocation of microwave operations in the 2 GHz band to accommodate emerging technologies would impose extremely heavy burdens on existing 2 GHz microwave users, particularly

¹ Redevelopment of Spectrum To Encourage Innovation in the Use of New Telecommunications Technologies, 7 FCC Rcd 1542 (1992) (Notice of Proposed Rulemaking) [hereinafter "Notice"].

telephone and cellular common carriers. Accordingly, there is widespread agreement that existing 2 GHz users should not be relocated prematurely or unnecessarily.

Specifically, the Commission should address three important issues before ordering any forced relocation of 2 GHz licensees. First, the current uncertainty regarding the nature of emerging technologies and the means of accommodating relocated 2 GHz users in the higher bands must be resolved. Second, the Commission should reassess its original estimates to fully recognize the costs and burdens of relocation on existing 2 GHz users. Third, the Commission should fully explore the possibilities for spectrum sharing before requiring the relocation of 2 GHz licensees. Until such issues are resolved, the true effects of the proposed relocation scheme cannot be evaluated. If relocation is then deemed necessary, the public interest requires an appropriate transition period to permit the orderly and least costly migration to suitable alternative facilities.

II. THE COMMENTERS AGREE THAT EXISTING 2 GHZ USERS SHOULD NOT BE RELOCATED PREMATURELY OR UNNECESSARILY

The comments in this proceeding document the extensive use of the 2 GHz band for a wide range of important, publicly beneficial services. In addition to providing critical links for power, water, and other utilities, 2 GHz microwave paths are essential components of the nation's telephone and

cellular infrastructure. The OET Report highlights the fact that the common carrier microwave frequencies are especially heavily used.² Due to the favorable propagation characteristics of these frequencies, cellular carriers in particular have increasingly relied on 2 GHz paths to connect their systems.

Given these important uses of the 2 GHz microwave frequencies, the commenters understandably raise concerns about the Commission's proposed relocation plan. Clearly, existing 2 GHz licensees should not be ousted without a careful evaluation of all pertinent information. Yet, as numerous commenters point out, several issues integral to the feasibility of the relocation scheme remain uncertain or incomplete. Until these issues are explored further, any relocation of existing users would be premature -- and perhaps unnecessary.

A. Significant Uncertainty Remains Regarding the Nature of Emerging Technologies and the Means of Accommodating Relocated 2 GHz Users

As an initial matter, the "emerging technologies" proposed to replace existing users in the 2 GHz band remain largely unidentified. Although in the Notice the Commission refers to personal communications services ("PCS"), mobile

² "Creating New Technology Bands for Emerging Telecommunications Technology," FCC/OET TS 91-1 at 8 (December 1991) [hereinafter OET Report].

satellite services, and a digital audio broadcasting service as possible candidates for the band,³ the actual parameters of these offerings have not yet been defined.

In response to the Notice, numerous parties have supported varying service characteristics and spectrum needs that would, accordingly, have differing impacts on existing users. A number of commenters stress that, until specific replacement services are targeted and defined, it will be impossible to assess the value of these offerings vis-a-vis existing 2 GHz uses.⁴ Similarly, until such time, the Commission will be unable to fairly assess which use of the spectrum would better serve the public interest.

Many parties also underscore the fact that the Commission has not yet resolved how the future needs of microwave licensees will be accommodated. To facilitate relocation to the higher microwave frequencies, the Notice proposes only a waiver of the eligibility requirements for these bands.⁵ Relocated 2 GHz users would, however, have to comply with the bands' existing technical and coordination

³ Notice at ¶¶ 4-5.

⁴ See, e.g., Comments of Alltel Companies ("Alltel") at 5; Comments of American Petroleum Institute ("API") at 34-44; Comments of Cellular Telecommunications Industry Association ("CTIA") at 3; Comments of McCaw Cellular Communications, Inc. ("McCaw") at 9-11; Comments of Utilities Telecommunications Council ("UTC") at 2-4.

⁵ Id. at ¶ 20.

requirements.⁶ As pointed out by numerous commenters, the current channelization, loading, path distance, and other requirements of the higher frequency microwave bands would preclude many common 2 GHz uses.⁷

Clearly, if relocation is to be feasible, technical and operational standards for the higher bands must be modified to accommodate relocated 2 GHz users. Alcatel Network Systems, Inc. and the Utilities Telecommunications Council have both filed petitions for rulemaking for this purpose.⁸ There is strong support among the commenters for promptly initiating such further proceedings and addressing necessary rule modifications prior to proceeding with the Commission's proposal. Until such steps are taken, the true effects of the proposed relocation scheme cannot be ascertained.⁹

⁶ Id.

⁷ See, e.g., Comments of Alcatel Network Systems, Inc. ("Alcatel") at 14-16; Comments of Alltel at 4-5; Comments of Harris Corporation, Farinon Division ("Harris") at 9-10; Comments of Pacific Telesis Corp. ("PacTel") at 20-21; Comments of UTC at 49-52.

⁸ See Alcatel Network Systems, Inc. Petition for Rulemaking in the Matter of Amendment of Parts 2, 21, 25 and 94 of the Commission's Rules To Accommodate Common Carrier and Private Op-Fixed Microwave Systems in Bands Above 3 GHz, RM-8004 (filed May 22, 1992); Utilities Telecommunications Council Petition for Rulemaking in the Matter of Amendment of Parts 2, 21, and 94 of the Commission's Rules To Accommodate Private Microwave Systems in the 1.71-1.85 GHz Bands and in Bands Above 3 GHz, RM-7981 (filed March 31, 1992).

⁹ See, e.g., Comments of American Gas Association ("AGA") at 5; Comments of Alcatel at 30-34; Comments of
(continued...)

B. The Commenters Generally Agree That the Notice
Seriously Underestimates the Cost of Relocation to
Existing 2 GHz Users

The record confirms that the Notice and OET Report seriously understate the costs and burdens of relocation to existing 2 GHz licensees. While the OET Report estimates the average cost of relocating to higher microwave frequencies at the conclusion of the proposed transition period to be \$25,000 per facility,¹⁰ Southwestern Bell Corporation projects that a more reasonable assessment would be ten times that amount.¹¹ Other commenters put forth similar calculations.¹²

The record confirms that OET has substantially underestimated the costs of certain items, while omitting others from consideration. Several commenters observe that the OET Report fails to recognize the increased cost of

⁹(...continued)
Harris at 10; Comments of McCaw at 26-27; Comments of PacTel at 20-21; Comments of UTC at 52-53.

¹⁰ OET Report at 31-33.

¹¹ Comments of Southwestern Bell Corporation ("SW Bell") at 8.

¹² See, e.g., Comments of Association of American Railroads ("AAR") at 40 (\$150,000-\$175,000 per facility); Comments of Associated PCN Company at 8 (\$286,000 per facility).

equipment for the higher frequency microwave bands.¹³

Others note that fiber is not a viable option because of the increased cost of this transmission medium.¹⁴

As Centel detailed in its comments, the Notice overlooks a number of costs involved in the proposed relocation. Among these are the cost of constructing necessary intermediate or reinforced antenna structures, the cost of reengineering the system to accommodate alternative transmission media, the cost of overcoming terrain or environmental problems, and the cost of acquiring necessary zoning approvals for additional or modified towers.

As a separate matter, the Notice fails to consider the potential impact of relocation on the cost of services provided by 2 GHz licensees to the public. Several commenters express concerns that, if negotiations with emerging technologies licensees are not successful, the full costs of relocation will be passed on to the ultimate consumers of telecommunications, utilities and other services

¹³ See, e.g., Comments of Huffman Communications, Cal Autofone, and Radio Electronics Products Corp. at 2; Comments of McCaw at 34; Comments of Ocom Corporation ("Ocom") at 7-9.

¹⁴ See, e.g., Comments of AAR at 38-40; Comments of AGA at 6-7; Comments of MCI Telecommunications Corporation ("MCI") at 3; Comments of NYNEX Mobile Communications Company ("NYNEX") at 3 n.4; Comments of UTC at 54-61.

which use the 2 GHz band.¹⁵ One commenter contends that relocation would nearly triple the cost of cellular operations.¹⁶

Finally, the Commission wholly ignores the burdens of relocating to alternative transmission media. The Notice overstates the ease with which existing users can relocate to alternative radio frequencies or transmission media. As emphasized by numerous commenters, the suggested alternatives may not offer the most desirable operational characteristics as existing 2 GHz operations.¹⁷ Other bands present interference problems with existing users.¹⁸ Any decrease in quality or reliability will clearly be felt by the public. A fair assessment of the proposed relocation plan requires that these and all the costs and burdens of relocation be considered by the Commission.

¹⁵ See, e.g., Comments of Arizona Public Service Company at 2; Comments of Central Maine Power Company ("Central Maine") at 2; Comments of Union Telephone Company at 2.

¹⁶ Comments of Bluegrass Cellular, Inc. at 2.

¹⁷ See, e.g., Comments of AGA at 4-6; Comments of American Public Power Association ("APPA") at 11-13; Comments of Central Maine at 2; Comments of JSM Tele-Page, Inc. at 4 n.5; Comments of Ocom at 3-9; Comments of UTC at 46-53.

¹⁸ See, e.g., Comments of Alcatel at 20-23; Comments of Ocom at 6-7.

C. The Commission Should Thoroughly Explore Potential Spectrum Sharing Techniques Before Requiring the Relocation of 2 GHz Licensees

In initiating this proceeding, the Commission assumes that the wholesale relocation of existing 2 GHz microwave licensees is necessary to accommodate as yet unidentified emerging technologies. However, this approach ignores spectrum sharing possibilities that might allow new services to co-exist with current microwave operations.

The record catalogues numerous new services and technological developments which could permit sharing in the 2 GHz band. For example, a number of potential PCS providers describe technologies which would permit the deployment of "personal communications networks" in the 2 GHz band with minimal impact on existing users.¹⁹ Others highlight the suitability of unlicensed "Part 16" services like wireless PBX systems, enhanced cordless phone services and wireless data networks operating on an in-building or on-premises

¹⁹ See, e.g., American Personal Communications Supplement to Petition for Rulemaking, GEN Docket 90-314 (filed June 25, 1992) (describing Frequency Agile Sharing Technique ("FAST")); PCN America Amendment, GEN Docket 90-314, PP-5, Appendix A (filed June 25, 1992) (describing time division duplex wideband spread spectrum scheme); Comments of Ameritech Operating Companies at 10-11 (describing frequency agile approach that would permit interference-free sharing); Comments of Southwestern Bell at 3-4 (describing Intelligent Multiple Access Spectrum Sharing ("IMASS")).

basis, which could co-exist with microwave licensees.²⁰ Further, COMSAT has submitted a study purportedly demonstrating that the Mobile Satellite Service can share the 2 GHz band effectively with terrestrial services.²¹

These accounts provide substantial support for the technical feasibility of sharing the 2 GHz spectrum. Given the scarcity of available spectrum and the substantial costs of relocation, sharing of the 2 GHz band between existing users and providers of new emerging technologies would undoubtedly be the most desirable solution.²² Accordingly, the vast majority of commenters state emphatically that the Commission should carefully consider and thoroughly explore the wide range of spectrum sharing proposals before making a final decision to require the relocation of existing

²⁰ See, e.g., Comments of ROLM Systems at 15-16; Comments of Rose Communications at 6-9.

²¹ Comments of Communications Satellite Corporation ("COMSAT") at Appendix A.

²² A number of commenters also stress that the 2 GHz band may not be the only suitable band for some of the emerging technologies contemplated. Indeed, several parties assert that such services could also operate in less congested spectrum above 3 GHz or in the government bands. See, e.g., Comments of GTE Service Corporation ("GTE") at 9; Comments of the Large Public Power Council at 17-32; Comments of Ocom at 14-17. See also American Telephone and Telegraph Company Request for Pioneer's Preference, PP-43 (filed May 4, 1992) (for PCS services at 6 GHz). These possibilities should also be thoroughly explored.

users.²³ Failure to do so could result in the premature and potentially unnecessary relocation of 2 GHz microwave licensees.

III. IF RELOCATION IS DEEMED NECESSARY, THE COMMENTERS
SUPPORT AN APPROPRIATE TRANSITION PERIOD TO PERMIT THE
ORDERLY AND LEAST COSTLY MIGRATION TO ALTERNATIVE
FACILITIES

If, upon thorough exploration and resolution of the above issues, relocation of 2 GHz microwave licensees is deemed necessary, the Commission must implement an appropriate transition period to minimize the costs of relocation to these entities. A review of the comments reveals general agreement that any such transition period must be governed by the following principles.

First, the transition period must be sufficient to permit existing users to recoup their investment in their current equipment before having to relocate. Toward this end, there is strong support for making this period a minimum of 15 years.²⁴ As Centel and others have highlighted in their opening comments, a substantial amount of 2 GHz microwave equipment -- especially that used in conjunction

²³ See, e.g., Comments of Associated PCN Company at 3-7; Comments of McCaw at 19-25; Comments of Spatial Communications, Inc. at 2-5; Comments of Telocator at 11-12.

²⁴ See, e.g., Comments of Central Power and Light Company at 3; Comments of CTIA at 4; Comments of Ocom at 18 n.18; Comments of SW Bell at 19; Comments of Vanguard Cellular Systems, Inc. ("Vanguard") at 17-18.

with cellular systems -- is relatively new.²⁵ As such, fifteen years is the minimum time necessary to allow this equipment to approach the end of its useful life.

After the conclusion of the transition period, 2 GHz microwave users should be permitted to retain primary status for their facilities until emerging technologies licensees seek use of the spectrum. Many 2 GHz users are located in rural or remote areas -- where new technologies operators may not initially or ever seek to provide service. The majority of commenters agree that it would be premature to require the relocation of these users prior to any expression of interest by emerging technologies providers.²⁶ Consequently, existing 2 GHz users should be accorded a minimum time period within which to relocate after they are requested to move.

Finally, existing 2 GHz users should not be required to relocate unless and until suitable alternative facilities are available. The vast majority of commenters recognize that it will not be feasible to relocate all 2 GHz microwave facilities.²⁷ Indeed, the record is replete with examples

²⁵ The OET Report recognizes that half of the common carrier 2 GHz equipment used today is less than three years old. OET Report at 32.

²⁶ See, e.g., Comments of GTE at 24; Comments of SW Bell at 19-20; Comments of Telocator at 8-9; Comments of Vanguard at 18.

of existing 2 GHz paths which cannot feasibly be replaced due to the technical unsuitability of higher microwave frequencies or other transmission media, or due to the prohibitively higher cost of switching to such facilities. In order to prevent the elimination or deterioration of service, the Commission must permit users without realistic alternatives to continue to operate their current 2 GHz facilities indefinitely on a co-primary basis.

IV. CONCLUSION

For the foregoing reasons, Centel urges the Commission to carefully evaluate the proposed relocation of 2 GHz microwave licensees. The public interest requires that existing users not be displaced prematurely or unnecessarily.

Respectfully submitted,

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²⁷(...continued)

²⁷See, e.g., Comments of APPA at 11-13; Comments of Harris at 3; Comments of the Large Public Power Council at 35-38; Comments of McCaw at 28-31; Comments of Seattle City Light at 2; Comments of Telocator at 6-8; Comments of United States Telephone Association at 5.